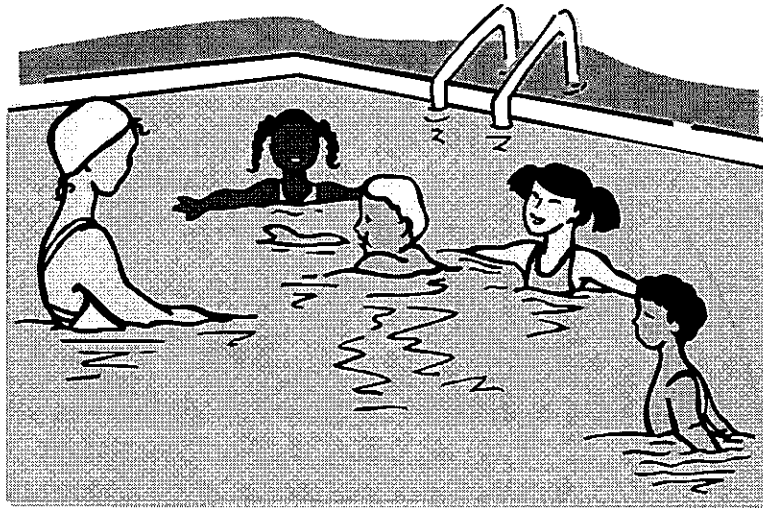


**State of Connecticut  
Department of Public Safety  
Office of State Building Inspector  
Division of Fire, Emergency and Building Services**



Text and Illustrations  
Section AG105

# Swimming Pools

The drawings contained in this brochure pertain to Appendix G of the 2012 International Residential Code along with a portion of the 2016 Amendment to the State Building Code. These drawings are for illustration purposes only. The written code text shall apply.

## APPENDIX G

# SWIMMING POOLS, SPAS AND HOT TUBS

*(The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.)*

### SECTION AG101 GENERAL

**AG101.1 General.** The provisions of this appendix shall control the design and construction of swimming pools, spas and hot tubs installed in or on the lot of a one- or two-family dwelling.

**AG101.2 Pools in flood hazard areas.** Pools that are located in flood hazard areas established by Table R301.2(1), including above-ground pools, on-ground pools and in-ground pools that involve placement of fill, shall comply with Section AG101.2.1 or AG101.2.2.

**Exception:** Pools located in riverine flood hazard areas which are outside of designated floodways.

**AG101.2.1 Pools located in designated floodways.** Where pools are located in designated floodways, documentation shall be submitted to the *building official* which demonstrates that the construction of the pool will not increase the design flood elevation at any point within the *jurisdiction*.

**AG101.2.2 Pools located where floodways have not been designated.** Where pools are located where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed pool will not increase the design flood elevation more than 1 foot (305 mm) at any point within the *jurisdiction*.

### SECTION AG102 DEFINITIONS

**AG102.1 General.** For the purposes of these requirements, the terms used shall be defined as follows and as set forth in Chapter 2.

**AG102.1.1 Definitions.** Amend the following definitions to read as follows:

**ABOVE-GROUND/ON-GROUND POOL.** See "Swimming pool."

**BARRIER.** A fence, wall, building wall or combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool.

**HOT TUB.** See "Swimming pool."

**IN-GROUND POOL.** See "Swimming pool."

**RESIDENTIAL.** That which is situated on the premises of a detached one- or two-family dwelling, or a one-family townhouse not more than three stories in height where the pool is intended to be used by the owners and invited guests.

**SPA, NONPORTABLE.** See "Swimming pool."

**SPA, PORTABLE.** A nonpermanent structure intended for recreational bathing, in which all controls, water-heating and water-circulating *equipment* are an integral part of the product.

**SWIMMING POOL.** Any structure intended for swimming or recreational bathing that contains water more than 24 inches (610 mm) deep. This includes in-ground, above-ground and on-ground swimming pools, hot tubs and spas.

**SWIMMING POOL, INDOOR.** A swimming pool which is totally contained within a structure and surrounded on all four sides by the walls of the enclosing structure.

**SWIMMING POOL, OUTDOOR.** Any swimming pool which is not an indoor pool.

### SECTION AG103 SWIMMING POOLS

**AG103.1 In-ground pools.** In-ground pools shall be designed and constructed in compliance with ANSI/NSPI-5.

**AG103.2 Above-ground and on-ground pools.** Above-ground and on-ground pools shall be designed and constructed in compliance with ANSI/NSPI-4.

**AG103.3 Pools in flood hazard areas.** In flood hazard areas established by Table R301.2(1), pools in coastal high-hazard areas shall be designed and constructed in compliance with ASCE 24.

### SECTION AG104 SPAS AND HOT TUBS

**AG104.1 Permanently installed spas and hot tubs.** Permanently installed spas and hot tubs shall be designed and constructed in compliance with ANSI/NSPI-3.

**AG104.2 Portable spas and hot tubs.** Portable spas and hot tubs shall be designed and constructed in compliance with ANSI/NSPI-6.

### SECTION AG105 BARRIER REQUIREMENTS

**AG105.1 Application.** The provisions of this appendix shall control the design of barriers for residential swimming pools, spas and hot tubs. These design controls are intended to provide protection against potential drownings and near-drownings by restricting access to swimming pools, spas and hot tubs.

**AG105.2 Outdoor swimming pool.** An outdoor swimming pool, including an in-ground, above-ground or on-ground pool, hot tub or spa, shall be surrounded by a barrier which shall comply with the following:

1. The top of the barrier shall be at least 48 inches (1219 mm) above *grade* measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm) measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above grade, such as an above-ground pool, the barrier may be at ground level, such as the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).
2. Openings in the barrier shall not allow the passage of a 4-inch-diameter (102 mm) sphere.
3. Solid barriers which do not have openings, such as a masonry or stone wall, shall not contain indentations or protrusions, except for normal construction tolerances and tooled masonry joints.
4. Where the barrier is composed of horizontal and vertical members, and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed  $1\frac{3}{4}$  inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed  $1\frac{3}{4}$  inches (44 mm) in width.
5. Where the barrier is composed of horizontal and vertical members, and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed  $1\frac{3}{4}$  inches (44 mm) in width.
6. Maximum mesh size for chain link fences shall be a  $2\frac{1}{4}$ -inch (57 mm) square, unless the fence has slats fastened at the top or the bottom which reduce the openings to not more than  $1\frac{3}{4}$  inches (44 mm).
7. Where the barrier is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall not be more than  $1\frac{3}{4}$  inches (44 mm).
8. Access gates shall comply with the requirements of Items 1 through 7, and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool, and shall be self-closing and have a self-latching device. Gates, other than pedestrian access gates, shall have a self-latching device. Where the release mechanism of the self-latching device is located less than 54 inches (1372 mm)

from the bottom of the gate, the release mechanism and openings shall comply with the following:

- 8.1. The release mechanism shall be located on the pool side of the gate at least 3 inches (76 mm) below the top of the gate; and
- 8.2. The gate and barrier shall have no opening larger than  $\frac{1}{2}$  inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.
9. Where a wall of a *dwelling* serves as part of the barrier, one of the following conditions shall be met:
  - 9.1. The pool shall be equipped with a powered safety cover in compliance with ASTM F1346;
  - 9.2. Doors with direct access to the pool through that wall shall be equipped with an alarm which produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed and *labeled* in accordance with UL 2017. The deactivation switch(es) shall be located at least 54 inches (1372 mm) above the threshold of the door; or
  - 9.3. Other means of protection, such as self-closing doors with self-latching devices, which are *approved* by the governing body, shall be acceptable as long as the degree of protection afforded is not less than the protection afforded by Item 9.1 or 9.2 described herein.
10. Where an above-ground or on-ground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, the ladder or steps shall be surrounded by a barrier that meets the requirements of Section AG105.2, Items 1 to 9, inclusive.

**AG105.3 Indoor swimming pool.** Walls surrounding an indoor swimming pool shall comply with Item 9 of Section AG105.2.

**AG105.4 Prohibited locations.** Barriers shall be located to prohibit permanent structures, *equipment* or similar objects from being used to climb them.

**AG105.5 Barrier exceptions.** Spas or hot tubs with a safety cover which comply with ASTM F1346 shall be exempt from the provisions of this appendix.

**AG105.6 Temporary enclosure.** A temporary enclosure shall be installed prior to the electrical bonding inspection of any in-ground swimming pool unless the permanent barrier specified in Section AG105.2 is in place prior to the commencement of the installation. The temporary enclosure shall be a minimum of 4 feet (1219) in height, shall have no openings that will allow passage of a 4-inch sphere and shall be equipped with a positive latching device on any openings.

**AG105.7 Pool alarm.** Pursuant to section 29-265a of the Connecticut General Statutes, no building permit shall be issued for the construction or substantial alteration of a swimming pool at a residence occupied by, or being built for, one or more families unless a pool alarm is installed with the swimming pool. As used in this section, "pool alarm" means

a device that emits a sound of at least 50 decibels when a person or an object weighing 15 pounds or more enters the water in a swimming pool.

**Exception:** Hot tubs and portable spas shall be exempt from this requirement.

## SECTION AG106 ENTRAPMENT PROTECTION FOR SWIMMING POOL AND SPA SUCTION OUTLETS

**AG106.1 General.** Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.

## SECTION AG107 ABBREVIATIONS

### AG107.1 General.

ANSI—American National Standards Institute  
11 West 42nd Street  
New York, NY 10036

APSP—Association of Pool and Spa Professionals  
NSPI—National Spa and Pool Institute  
2111 Eisenhower Avenue  
Alexandria, VA 22314

ASCE—American Society of Civil Engineers  
1801 Alexander Bell Drive  
Reston, VA 98411-0700

ASTM—ASTM International  
100 Barr Harbor Drive  
West Conshohocken, PA 19428

UL—Underwriters Laboratories, Inc.  
333 Pfingsten Road  
Northbrook, IL 60062-2096

## SECTION AG108 REFERENCED STANDARDS

### AG108.1 General.

#### ANSI/NSP

ANSI/NSPI-3—99 Standard for Permanently Installed  
Residential Spas . . . . . AG104.1

ANSI/NSPI-4—99 Standard for Above-ground/  
On-ground Residential  
Swimming Pools . . . . . AG103.2

ANSI/NSPI-5—03 Standard for Residential  
In-ground Swimming Pools. . AG103.1

ANSI/NSPI-6—99 Standard for Residential  
Portable Spas . . . . . AG104.2

#### ANSI/APSP

ANSI/APSP-7—06 Standard for Suction Entrapment  
Avoidance in Swimming Pools,  
Wading Pools, Spas, Hot Tubs  
and Catch Basins . . . . . AG106.1

#### ASCE

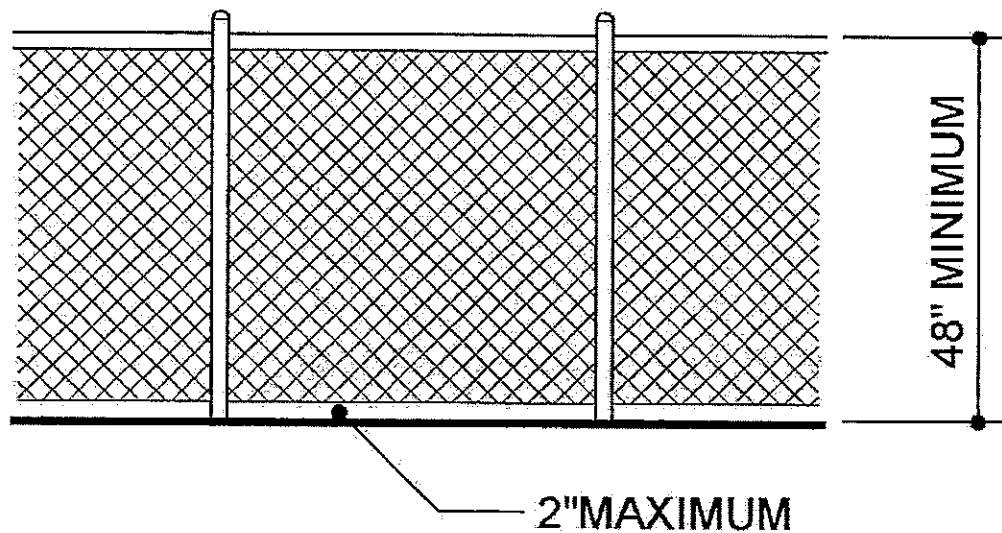
ASCE/SEI-24—05 Flood-resistant Design and  
Construction . . . . . AG103.3

#### ASTM

ASTM F1346—91 Performance Specification  
(2003) for Safety Covers and Labeling  
Requirements for All Covers  
for Swimming Pools Spas and  
Hot Tubs . . . . . AG105.2, AG105.5

#### UL

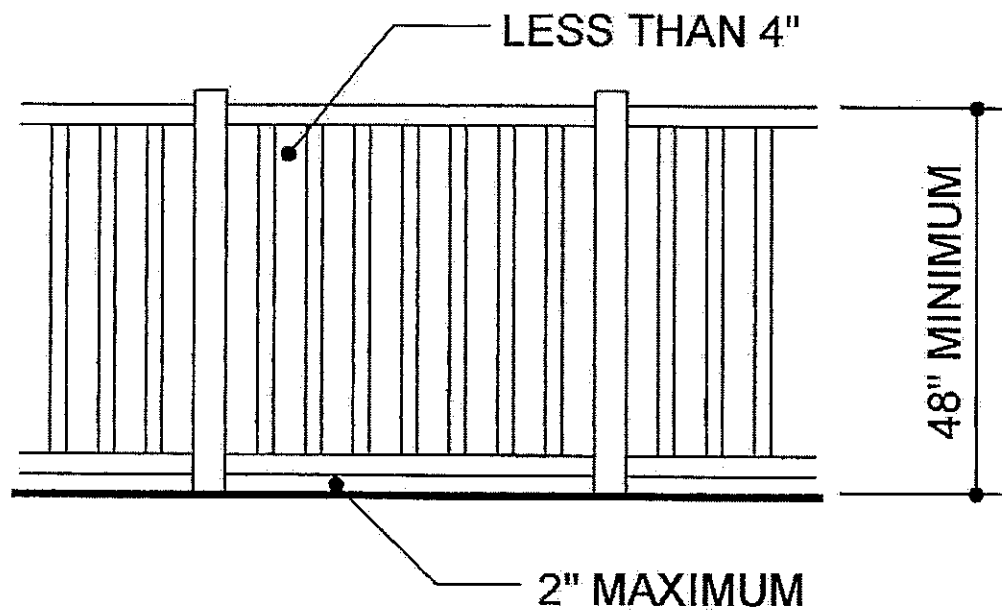
UL 2017—2000 Standard for General-purpose  
Signaling Devices and  
Systems—with revisions  
through June 2004. . . . . AG105.2



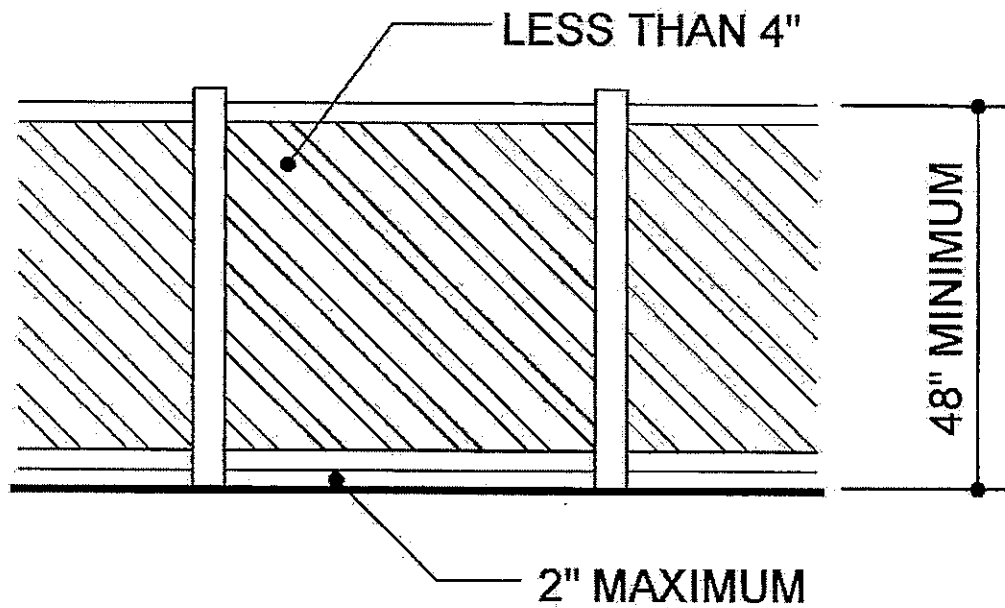
ELEVATION

OUTSIDE OF THE POOL ENCLOSURE

SECTION AG105.2, ITEM 1

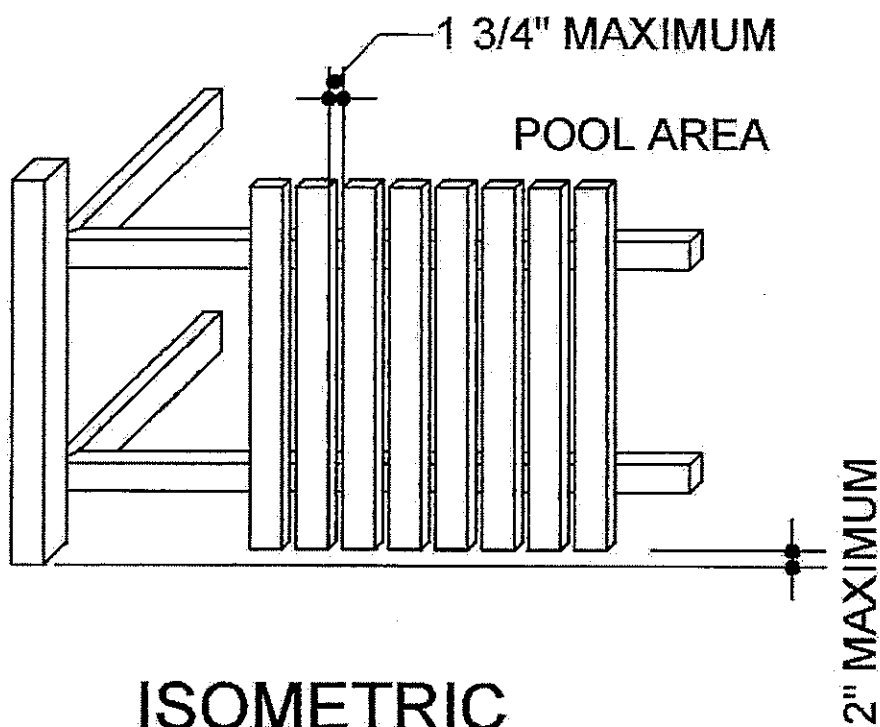
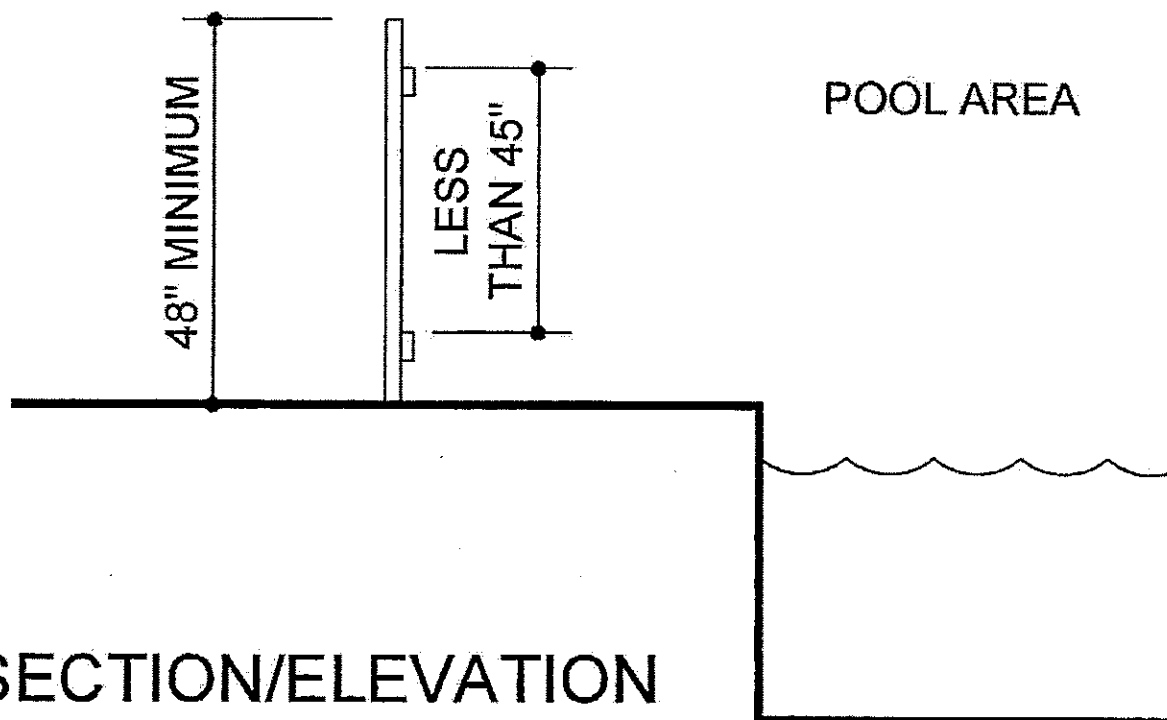


ELEVATION

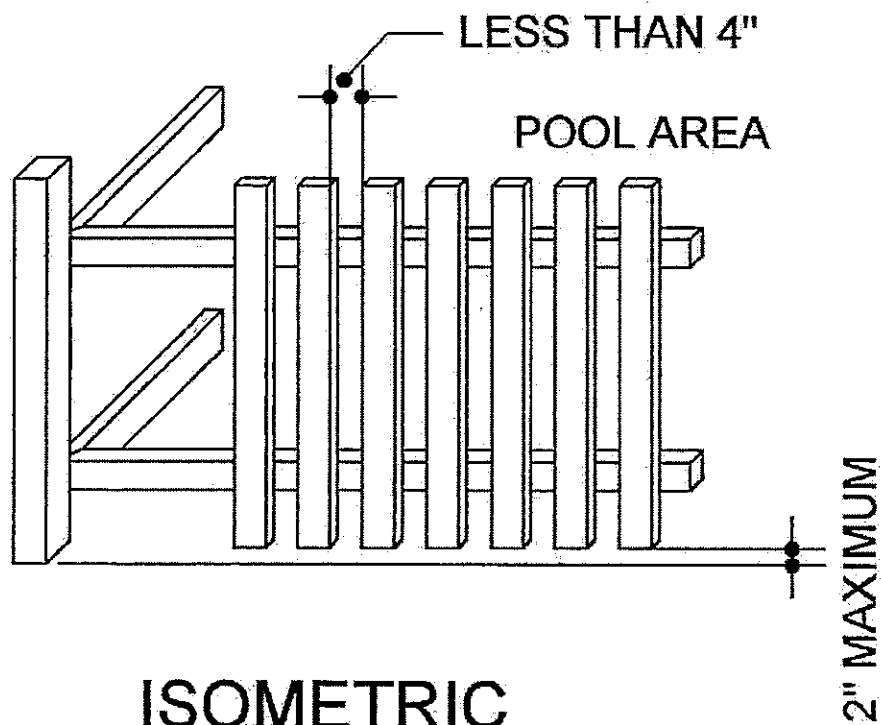
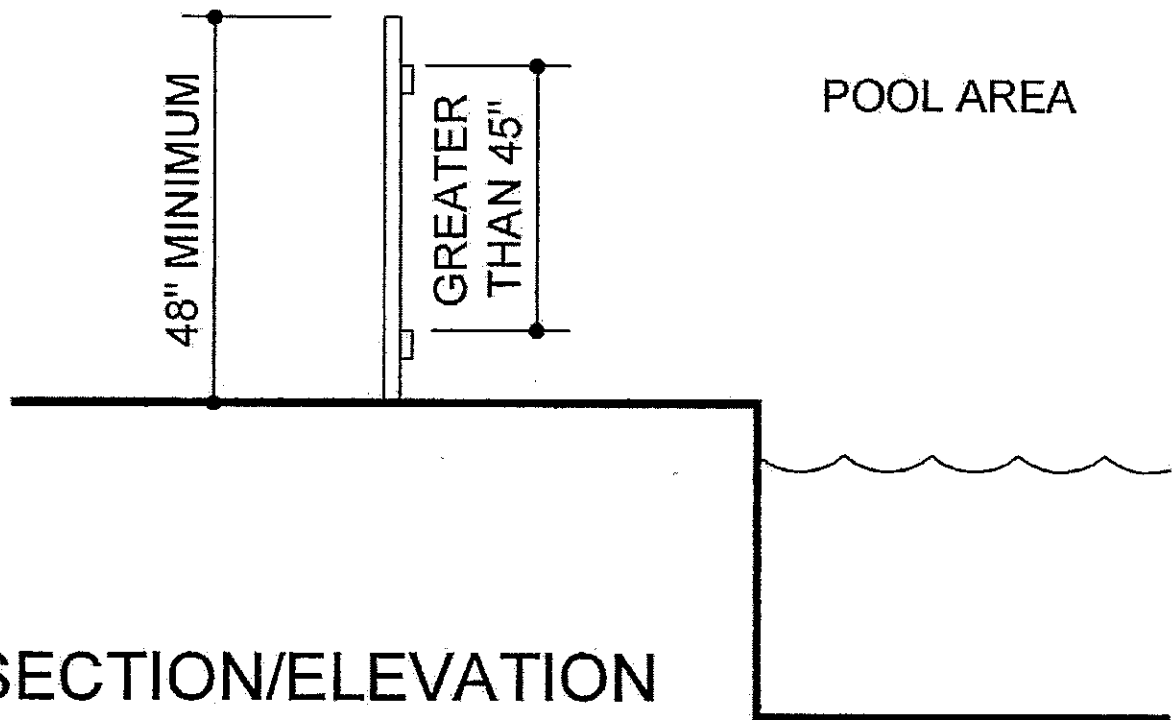


ELEVATION

SECTION AG105.2, ITEM 2

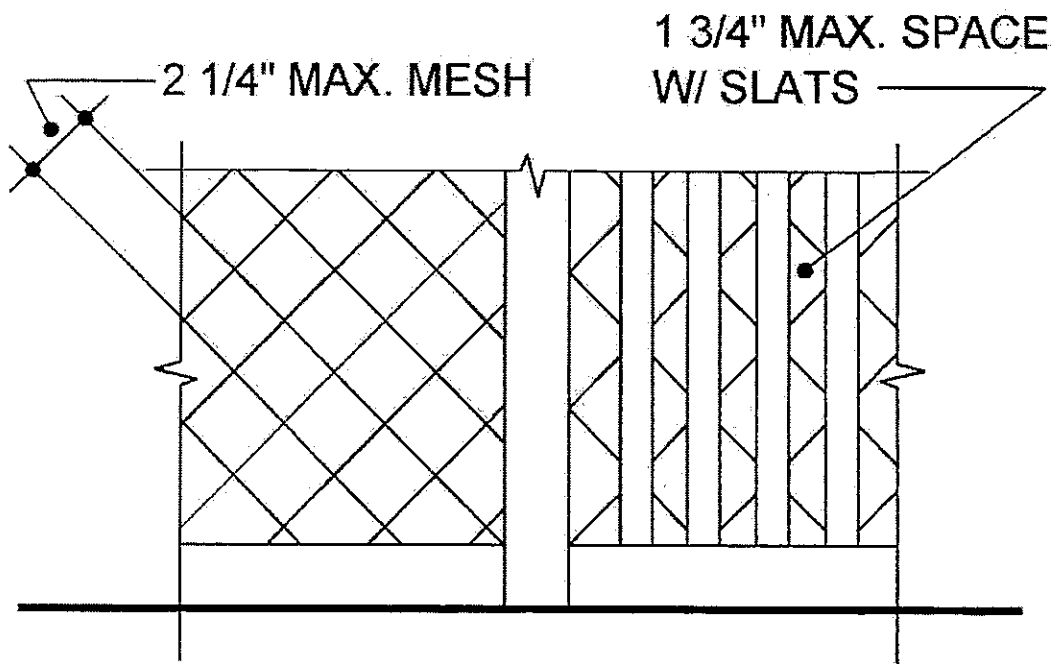


SECTION AG105.2, ITEM 4

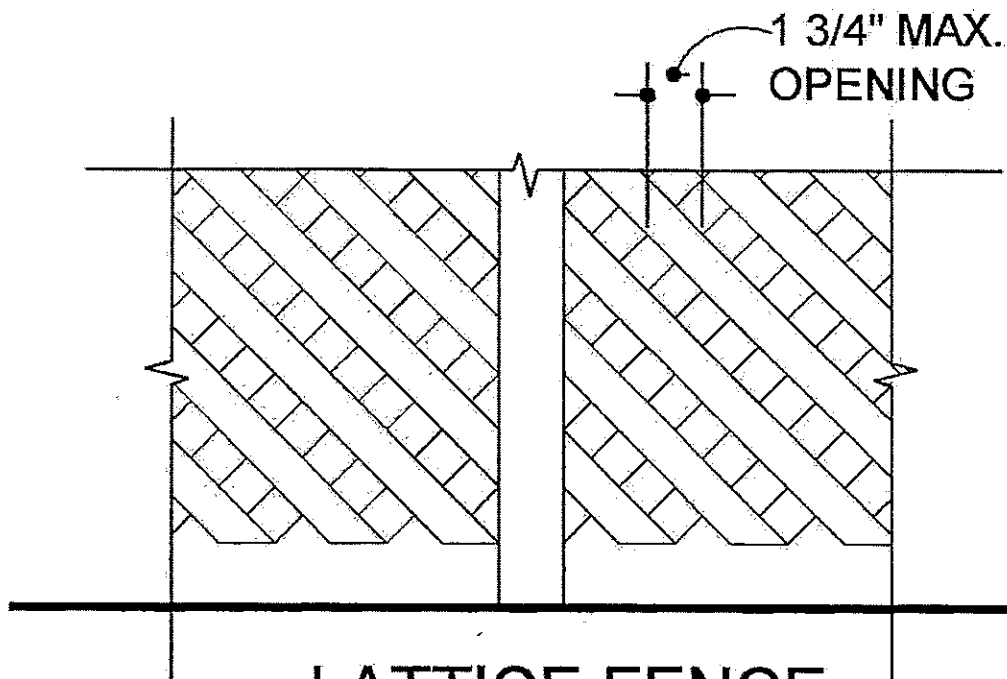


SECTION AG105.2, ITEM 5

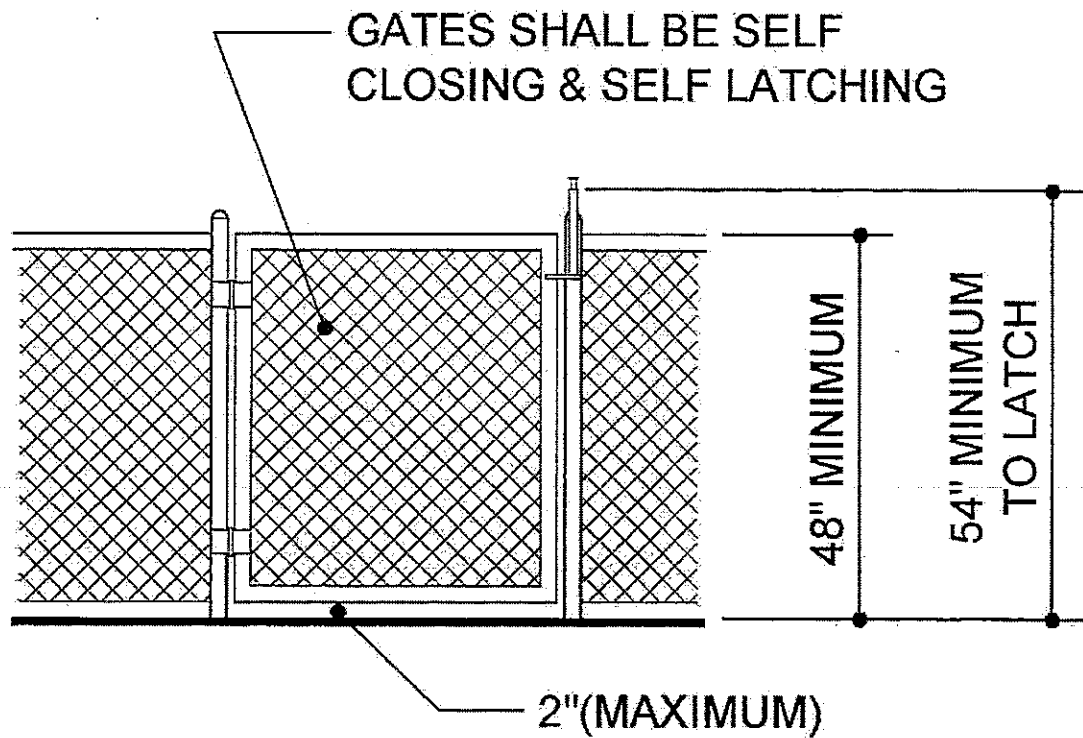




**CHAIN LINK FENCE**  
**SECTION AG105.2, ITEM 6**



**LATTICE FENCE**  
**SECTION AG105.2, ITEM 7**



ELEVATION

PEDESTRIAN ACCESS GATE

SECTION AG105.2, ITEM 8

**TOWN OF WEST HARTFORD**  
**Building Department**  
**50 South Main Street**  
**West Hartford, CT 06107**  
**(860)561-7530**

**SWIMMING POOL AGREEMENT**

In recognition of the serious safety issues associated with the ownership and maintenance of swimming pools, I hereby agree:

1. To comply with all applicable laws and regulations including: The latest adopted State Building Code, which includes the following:
  - a. Safety Barriers, fences, gates, etc.
  - b. Connecticut Amendments and errata.
  - c. National Electrical Code – wiring, lighting, etc.
  - d. 2009 International Energy Conservation Code – pool heaters, time clocks, pumps.
  - e. C.G.S. 29.265a – water motion pool alarm (obtained prior to issuance of the building permit).
2. If you have a septic system, please advise staff at time of application. Additional requirements apply.
3. To provide and maintain a temporary barrier to prevent access to the pool while the pool, deck, permanent barrier, etc. is constructed.
4. To call the West Hartford Building Department to schedule an electrical inspection prior to the backfilling of conduit and all related pool electrical work as per applicable sections of the National Electrical Code.
5. To call the West Hartford Building Department to schedule a final inspection upon completion of all code requirements at 860-561-7530.
6. Not to use my pool until a Certificate of Approval has been issued. A Certificate of Approval will be issued upon completion and inspection of all Code requirements.

I have read and understood the above Code requirements.

Street Address: \_\_\_\_\_

Property Owner: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

\_\_\_\_\_ Above Ground Pool

\_\_\_\_\_ In-Ground Pool

Signature of Land Owner: \_\_\_\_\_ Date: \_\_\_\_\_

Doc: Pool Agreement, Date: 03/22/16

## CONCERNING ALARMS FOR SWIMMING POOLS

### CONNECTICUT GENERAL STATUTE Section 29.265a as referenced in CONNECTICUT STATE BUILDING CODE

(a) As used in this section, "pool alarm" means a device which emits a sound of at least fifty decibels when a person or an object weighing fifteen pounds or more enters the water in a swimming pool.

(b) No building permit shall be issued for the construction or substantial alteration of a swimming pool at a residence occupied by, or being built for, one or more families unless a pool alarm is installed with the swimming pool.

Date: \_\_\_\_\_

As owner of property located at \_\_\_\_\_, I agree to  
purchase and install a swimming pool alarm in compliance with Public Act 99-140.

Property Owners Signature: \_\_\_\_\_

Property Owners Name Printed: \_\_\_\_\_